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A New Species of *Amaranthus* (Amaranthaceae) from Salta, Argentina

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ABSTRACT. *Amaranthus pedersenianus* N. Bayón & C. Peláez (Amaranthaceae) is a new Argentinian species of *Amaranthus* L. subg. *Albersia* (Kunth) Gren. & Godr. and is described and illustrated from the province of Salta. It is found in Andean puna and prepuna in both Salta and Jujuy provinces at altitudes between 2800 and 3775 m. *Amaranthus pedersenianus* is similar to *A. cardenasianus* Hunz., *A. hunzikeri* N. Bayón, *A. kloosianus* Hunz., *A. squamulatus* (Andersson) B. L. Rob., and *A. urceolatus* Benth. by its urceolate pistillate flowers with five sepals. The new taxon differs by its ascendant or erect habit, height of 5–20 cm, presence of leafless, short terminal inflorescences, flowers with usually four or five stamens, and dehiscent fruits.

Key words: Amaranthaceae, *Amaranthus*, Argentina, IUCN Red List.

The genus *Amaranthus* L. includes around 70 species: 10 are dioecious (Sauer, 1955) and the other 60 are monoecious (Costea & DeMason, 2001; Costea et al., 2001a, 2001b; Mosyakin & Robertson, 2003; Palmer, 2009). More than 40 species of *Amaranthus* are mainly distributed in tropical and warm temperate regions of the Americas, but several species are also present in Australia, Africa, and Eurasia.

The new species belongs to *Amaranthus* subg. *Albersia* (Kunth) Gren. & Godr. This is a subgenus of monoecious, mainly ascendant plants (sometimes erect), with dichasia arranged in axillary clusters and terminal spikelike inflorescences, as well as membranous bracts and bracteoles.

Amaranthus pedersenianus N. Bayón & C. Peláez, sp. nov. TYPE: Argentina. Salta: Dpto. Cachi, a 46 km de Cachi, camino a Salta, 19 mar. 1972, 3050 m, *A. Krapovickas, V. Maruñak, O. Oliva & H. Pueyo 21991* (holotype, CTES). Figure 1.

Haec species inter congeneros austroamericanos flores pistillatos urceolatos gerentes quoad habitum adscendentem erectumve etiam fructum dehiscentem *Amarantho cardenasiano* Hunz. similis, sed ab eo statura minore, foliis anguste ellipticis vel ellipticis atque inflorescentiis axillaribus glomerulatis et terminalibus spiciformibus brevibus distinguitur.

Herbs, probably annual, monoecious, usually ascendant, sometimes erect; taproot to 15 cm, rootlets few; stems 3 to 5, unbranched, glabrous, 5–20 cm tall, 0.5–4.5 mm thick at base, sometimes slender at apex, internodes 0.5–4 cm. Leaves similar in length throughout; petiole 5–12 mm, shorter than the lamina; lamina narrowly elliptic to elliptic, 1.9–3.3 × 0.4–1.4 cm, glabrous, dark green on both sides, attenuate at base, obtuse or rounded at apex with mucro 0.3–1 mm, margins crisped, veins raised abaxially. Inflorescences whitish green, sometimes with little pink spots, flowers in rounded axillary clusters of 0.5–1 cm diam., clusters solitary or crowded in terminal

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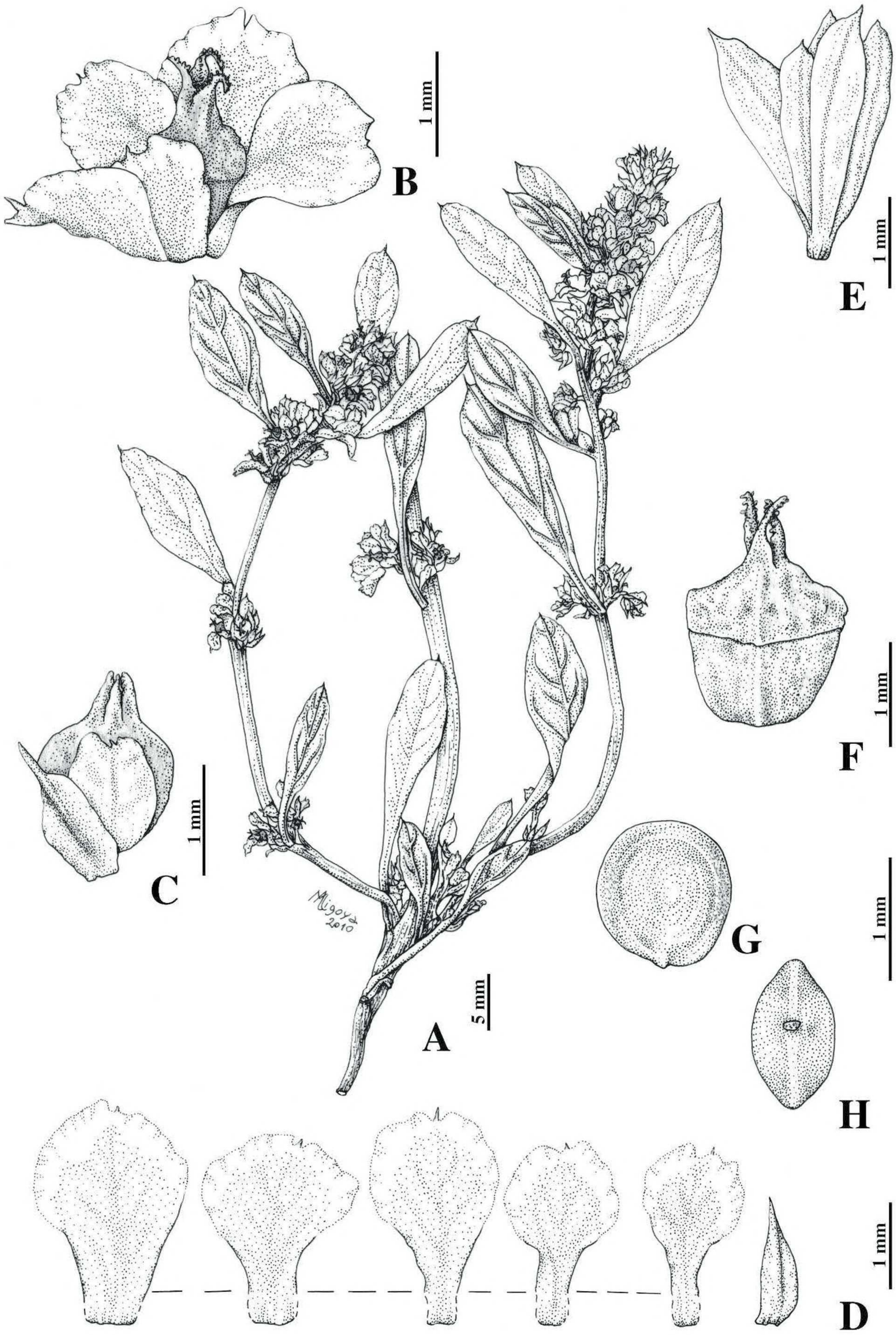

Figure 1. *Amaranthus pedersenianus* N. Bayón & C. Peláez. —A. Fertile habit. —B. Pistillate flower. —C. Pistillate flower with bract and only one sepal. —D. Sepals and bract (at far right) dissected from pistillate flower. —E. Staminate flower. —F. Fruit. —G. Seed, lateral view. —H. Seed, hilar view. Drawn from the holotype *A. Krapovickas, V. Maruñak, O. Oliva & H. Pueyo 21991* (CTES).

spikelike inflorescences, 1.5–4 × 0.5–0.7 cm; bracts and bracteoles narrowly ovate to ovate, persistent, shorter than the sepals, 0.9–2.5 × 0.4–1.1 mm, membranous, green along midvein, mucro 0.2–0.5 mm. Flowers of both sexes intermixed: staminate flowers 2–2.9 × 0.8–1.9 mm, with (3)4 or 5 narrowly elliptic sepals, 1.9–3.3 × 0.5–1 mm, whitish with green or light brown midvein, obtuse or subacute, sometimes mucronulate, scarious; stamens (3)4 or 5, filament 1–1.1 mm, anther 0.9–1 mm; pistillate flowers 2.2–3.2 × 2.5–4 mm distally, longer than mature fruit, urceolate with (3)4 or 5 sepals, sepals slightly swollen and joined 0.5 mm at base, obovate to spatulate, 2–4 mm, lamina expanded to 0.9–2.3 mm wide near tip, rounded to truncate, narrowed at base to 0.2–0.7 mm wide, overlapping and bent outward in upper half, scarious marginally and herbaceous centrally, usually notched apically, midvein profusely divided with many green branches, unequal; stigmas 3, narrow, usually bent outward or erect, 0.3–0.8 mm; rarely scattered among normal flowers, pistillate flowers may lack sepals or have only 1 to 3 ovate or elliptic, smaller sepals, 0.8–1.5 × 0.25–1 mm, shorter than the pistil. Fruit circumscissile, 1.1–2 × 1.2–1.5 mm (including stigmas), dark green; lid rugose, urn or bottom portion of fruit smooth or rugose; line of dehiscence at mid-portion of fruit; seeds 1–1.5 × 1–1.3 mm, dark brown to black, smooth and glossy centrally on the convex surfaces, margin minutely granular and dull.

Distribution, habitat, and phenology. *Amaranthus pedersenianus* has been collected from the Andes of the northwestern province of Salta (Argentina), where it was found at altitudes from 2800 to 3775 m in the puneña and prepuneña phytogeographic provinces. The new species has also been collected from adjacent Jujuy. According to the label of one paratype (*Cabrera 8697*), it has the vernacular name of "Ataco Silvestre." All the type material was collected from January to March with flowers and mature fruits.

IUCN Red List category. Since this species is known only from the limited type material, it is difficult to evaluate its distribution and population status. Therefore, it is not possible to assess its risk of extinction. For the moment, *Amaranthus pedersenianus* should be included in the category Data Deficient (DD), according to IUCN Red List criteria (IUCN, 2001).

Etymology. The specific epithet honors Troels Myndel Pedersen (1916–2000), a Danish botanist who lived in Argentina and studied the family Amaranthaceae widely.

Relationships. *Amaranthus pedersenianus* is similar to five South American species with urceolate pistillate flowers, which can have five sepals. The following taxonomic key distinguishes these species.

KEY TO FIVE SPECIES IN *AMARANTHUS* SUBG. *ALBERSIA* IN ANDEAN ARGENTINA

1a. Fruits indehiscent 2
2a. Pistillate flowers 3.5–5 mm wide distally .... *A. squamulatus* (Andersson) B. L. Rob.
2b. Pistillate flowers up to 2.5 mm wide distally.
3a. Leaves narrowly elliptic; staminate flowers with 5 stamens ..... *A. kloosianus* Hunz.
3b. Leaves elliptic to ovate; staminate flowers with (2)3 stamens ..... *A. urceolatus* Benth.
1b. Fruits dehiscent 4
4a. Plants prostrate to decumbent, < 5 cm high; flowers assembled in axillary clusters and crowded in leafy terminal spikelike inflorescence; stamens (2)3 or 4 ..... *A. hunzikeri* N. Bayón
4b. Plants ascendant or erect, > 5 cm high; flowers assembled in axillary clusters and leafless terminal spikelike inflorescences; stamens (3)4 or 5 5
5a. Plants 70–100 cm high; inflorescences mainly terminal, ca. 12 × 3 cm; stamens 5; leaves ovate to rhombic, 4–8 cm ..... *A. cardenasianus* Hunz.
5b. Plants 5–20 cm high; inflorescences axillary clusters 0.5–1 cm diam. and terminal spikelike, 1.5–4 × 0.5–0.7 cm; stamens (3)4 or 5; leaves narrowly elliptic to elliptic, 2.5–4.2 cm .... *A. pedersenianus* N. Bayón & C. Peláez

Paratypes. ARGENTINA. **Jujuy:** Dpto. Humahuaca, empalme a Iturbe, 20 ene. 1976, *A. L. Cabrera, S. Arroyo, N. M. Bacigalupo, E. G. Nicora & E. A. Ulibarri 27386* (SI). **Salta:** Dpto. Cachi, betw. Payogasta & Tin-Tin, 27 Feb. 1965, 2800 m, *J. H. Hunziker 8073* (CORD); Dpto. Rosario de Lerma, Santa Rosa de Tastil, 3250 m, 28 Feb. 2005, *G. E. Barboza, A. M. Matesevach, E. M. Filippa, C. Peláez & E. Marini 1453, 1455, 1455 bis* (CORD); Dpto. La Poma, Tipán, Campo de la Paciencia, 3600 m, 12 Feb. 1945, "Ataco Silvestre," *A. L. Cabrera 8697* (LP); Dpto. Los Andes, San Antonio de los Cobres, 3775 m, 7 Feb. 1946, *A. L. Cabrera 8971* (LP).

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